

CLAIMS

What is claimed is:

1. A coupling assembly, comprising:

a first member having an exterior surface, the exterior surface including at least one engagement feature; and

a second member having a portion for receiving a portion of the first member, the receiving portion having at least one interior surface that includes at least one locking feature configured to mate with the engagement feature of the first member to substantially prevent rotation of the first member relative to the second member during connection thereto.

2. A coupling assembly as recited in claim 1, wherein the engagement feature is defined by at least one protrusion in the exterior surface of the first member, the protrusion extending outward from a base reference point.

3. A coupling assembly as recited in claim 2, wherein the locking feature is defined by at least one interruption in the interior surface of the receiving portion, said interruption extending outward with respect to the base point.

4. A coupling assembly as recited in claim 3, wherein the engagement and locking features are received in the corresponding protrusion and interruption of the opposing member to create a radial interference.

5. A coupling assembly as recited in claim 4, wherein there are a plurality of protrusions and interruptions, the protrusions and the interruptions located on the respective members such that there is at least one orientation, wherein the members may fully engage by way of a mating of the protrusions and the interruptions.

6. A coupling assembly as recited in claim 1, wherein the engagement feature comprises a plurality of teeth.

7. A coupling assembly as recited in claim 6, wherein the locking feature comprises a plurality of grooves, the teeth of the first member configured to intermesh with the grooves of the second member.
8. A coupling assembly as recited in claim 1, wherein the engagement feature comprises a plurality of tabs.
9. A coupling assembly as recited in claim 8, wherein the locking feature comprises a plurality of slots that are configured to receive the tabs of the first member.
10. A coupling assembly as recited in claim 1, wherein several engagement features are substantially equidistantly spaced around the exterior surface of the first member.
11. A coupling assembly as recited in claim 1, wherein several engagement features are non-equidistantly spaced around the exterior surface of the first member.
12. A coupling assembly as recited in claim 1, wherein the engagement feature includes a tapered ramp and a shoulder.
13. A coupling assembly as recited in claim 12, wherein an apex is disposed between the tapered ramp and the shoulder.
14. A coupling assembly as recited in claim 13, wherein the apex is a substantially flat surface.
15. A coupling assembly as recited in claim 13, wherein a locking member is disposed between the first and second members for substantially locking movement of the first member relative to the second member in an axial direction.

16. A coupling assembly as recited in claim 15, wherein when the first member is sufficiently inserted into the second member, the exterior surface passes through the locking member where, upon further insertion, the locking member is expanded over the apex until it clears the apex whereby, the locking member contracts to a position between the first member and the second member to interconnect the members.

17. A coupling assembly as recited in claim 15, wherein the receiving portion of the second member includes an inwardly facing groove for receiving therein the locking member.

18. A coupling assembly as recited in claim 1 further including a release member moveably mounted on the first member for releasing the first member from the second member.

19. A coupling assembly as recited in claim 18, wherein the release member includes a flexible sealing portion, the flexible sealing portion configured to sealingly engage the second member upon connection of the first and second members.

20. A coupling assembly as recited in claim 1, wherein the first member includes an elbow.

21. A coupling assembly, comprising:

a first member having an exterior surface and a retaining formation, the retaining formation including at least one engagement feature;

a second member having a portion for receiving a portion of the first member, the second member including at least one locking feature configured to mate with the engagement feature of the first member to substantially prevent rotation of the first member relative to the second member during connection thereto, the receiving portion including an inwardly facing groove configured to receive a locking member; and whereby, when the first member is sufficiently inserted into the second member, the exterior surface passes through the locking member where, upon further insertion, the locking member is expanded over the retaining formation until it clears

the retaining formation whereby, the locking member contracts to a position between the first member and the second member to interconnect the members.

22. A coupling assembly as recited in claim 21, wherein the retaining formation is a portion of the engagement features.

23. A coupling assembly suitable for transmitting a flow of fluid into and out of an apparatus, comprising:

a first member having an exterior surface that includes at least one engagement feature; and

a second member having a portion for receiving a portion of the first member, the receiving portion being integrally formed in the apparatus, the second member including at least one locking feature configured to mate with the engagement feature of the first member to substantially prevent rotation of the first member relative to the second member during connection thereto.

24. A coupling assembly as recited in claim 23, wherein the first member includes a retaining formation and the receiving portion of the second member includes a locking member,

whereby, when the first member is sufficiently inserted into the second member, the exterior surface passes through the locking member where, upon further insertion, the locking member is expanded over the retaining formation until it clears the retaining formation whereby, the locking member contracts to a position between the first member and the second member to interconnect the members.

25. A coupling assembly suitable for transmitting a flow of fluid into and out of an apparatus, comprising:

a first member having an exterior surface that includes at least one engagement feature; and

a second member that includes an external segment having an external end, an internal segment having an internal end, the internal segment including a fit portion for engaging the apparatus upon receipt of second member within a port of the apparatus, the second member further including a portion for receiving a portion of

the first member, the receiving portion including at least one locking feature configured to mate with the engagement feature of the first member to substantially prevent rotation of the first member relative to the second member during connection thereto.

26. A coupling assembly as recited in claim 25, wherein the first member includes a retaining formation and the receiving portion of the second member includes a locking member,

whereby, when the first member is sufficiently inserted into the second member, the exterior surface passes through the locking member where, upon further insertion, the locking member is expanded over the retaining formation until it clears the retaining formation whereby, the locking member contracts to a position between the first member and the second member to interconnect the members.

27. A coupling assembly, comprising:

a first member having an engagement end and an exterior surface that includes at least one engagement features, the engagement feature positioned proximate the engagement end; and

a second member having a portion for receiving a portion of the first member, the receiving portion including at least one locking feature configured to mate with the engagement feature of the first member to substantially prevent rotation of the first member relative to the second member during connection thereto.

28. A coupling assembly as recited in claim 27, wherein the first member includes a retaining formation and the receiving portion of the second member includes a locking member,

whereby, when the first member is sufficiently inserted into the second member, the exterior surface passes through the locking member where, upon further insertion, the locking member is expanded over the retaining formation until it clears the retaining formation whereby, the locking member contracts to a position between the first member and the second member to interconnect the members.